



KENAI PENINSULA COOPERATIVE  
**INVASIVE SPECIES**  
**MANAGEMENT AREA**

**Early Detection & Rapid Response in Action**

Managing Invasive Species on Alaska's Kenai Peninsula through  
Partnership and Public Engagement

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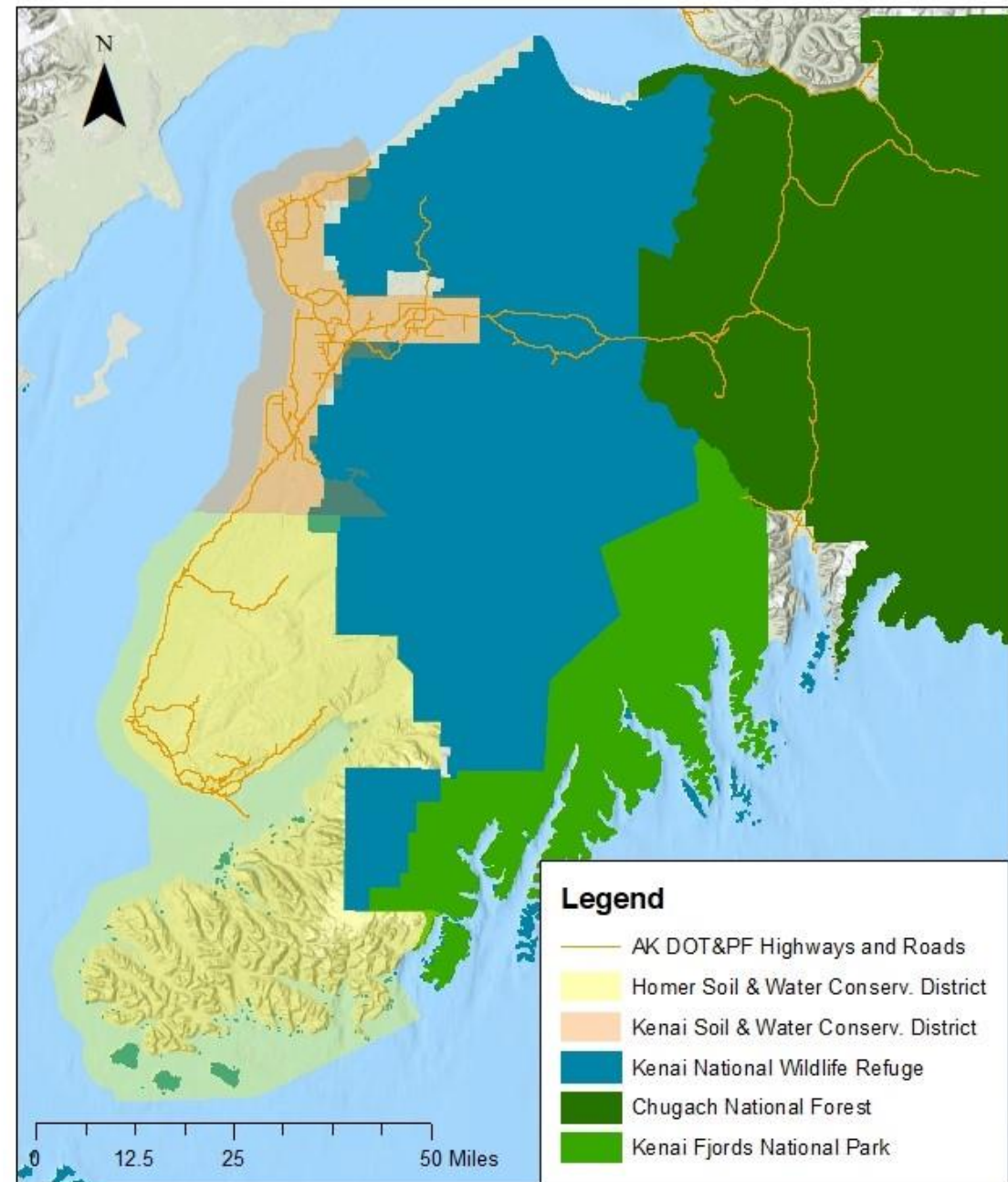
# Kenai Peninsula CISMA Geography

6-million-acre regional, landscape-scale approach to management

Kenai Peninsula Borough

Major Federal Landowners

- Kenai Fjords National Park
- Chugach National Forest
- Kenai National Wildlife Refuge





# KENAI PENINSULA COOPERATIVE **INVASIVE SPECIES MANAGEMENT AREA**



**SELDOVIA VILLAGE TRIBE**  
Tradition Integrated with Technology



**Homer Soil & Water**  
CONSERVATION DISTRICT



**20 Years of partnership!**







# Primary Goals

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**Prevent** the introduction and spread of invasive species

**Reduce** the extent and density of newly established infestations, minimizing spread and damage

Implement the most **economic, effective, and safe control methods** for priority invasives

**Facilitate cooperation** among those working to manage invasive species on the Kenai Peninsula

# Definitions

**Invasive species**: A species that is not native to an ecosystem and whose introduction can cause harm to the environment, economy, or human health

ENVIRONME  
NT



ECONOMY



HUMAN  
HEALTH



# Why are public, private & tribal landowners concerned with invasive species?

## Ecological Impacts

- Reduce biodiversity
- Decrease availability and quality of key natural resources (plants, water, soil)
- Disrupt habitats for species such as salmon and moose
- Alter water chemistry and stream flow

## Economic Impacts

- Value and quality of land is degraded
- Cost of controlling and eradicating invasive species can be great
- Elodea (aquatic invasive plant species) could cost the commercial salmon fishery \$159 million per year if allowed to spread (Schwoerer 2019)
- Cisma and Homer Electric Association spent \$70,000 in 2020 treating Reed Canarygrass alone on the powerline corridor above the Russian River





# Pathways How invasive species spread





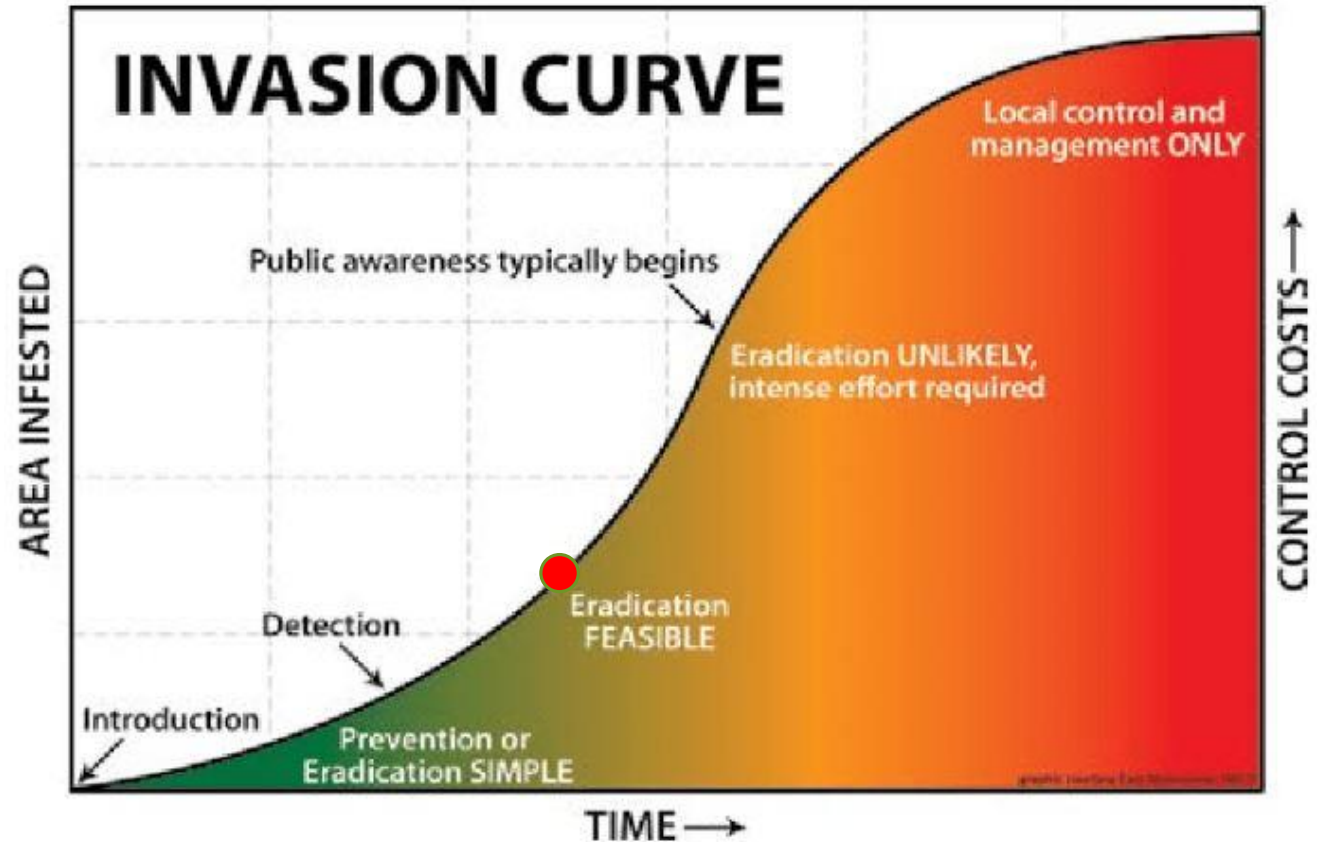
# “Invasion Curve”

Alaska is ahead of the curve regarding most invasive species.

## Eradication is still feasible.

Once we pass a certain point of the curve, eradication and control become extremely difficult.

**EDRR:** Defined as a coordinated set of actions to find and eradicate potential invasive species in a specific location before they spread and cause harm.



# How do we implement EDRR?

- Annual surveys for aquatic & terrestrial invasive plants throughout public & private lands
- Implement treatment & control
- Organize Community Weed Pulls & Volunteers
- Implement programs for priority species (e.g. chokecherry)
- Targeted outreach – user groups/ community councils
- Maintain database of infestations treated & submit records to AKEPIC
- Share resources & funding





# Integrated Pest Management

Manual, mechanical, chemical, biological, cultural options

# Implementing EDRR



**Homer Soil & Water**  
CONSERVATION DISTRICT

KP-CISMA Coordinator

KP-CISMA Outreach Coordinator



**KENAI**  
WATERSHED  
**FORUM**

KP-CISMA Field Coordinator



# Strategic Plans & IPM

KP-CISMA Strategic Plan

Priority Invasive Plant List

Elodea IPM Plan

Reed Canarygrass Strategic Plan

Reed Canarygrass White Papers

Non-Native Plant List

Annual Workshop/Training

Annual Reports

Annual Reed Canarygrass Workplan

Outreach & Education Strategy



## Integrated Weed Management Strategy Focusing on Early Detection/Rapid Response for the Kenai Peninsula - Cooperative Weed Management Area<sup>1</sup>

December 2007<sup>2</sup> (Revised September 2020)

### I. INTRODUCTION:

A common operating approach to the to focus strictly on specific sites. Infe to the entire problem in an area is not managers in a given area attempt to objectives, independent of each other

Treatment of specific invasive plants strategy. However, successful long-te weeds must include a broad-scale app management area is a broad-scale, las sites in context with geographic distr feasibility of management. The focus invasive plant problems across a land specific land ownerships.

The Kenai Peninsula - Cooperative W 2003 by Soil and Water Conservation Service – State and Private Forestry, agencies, organizations, tribal landow signed cooperative agreement, referre formally recognizes the organization the strategic, landscape approach wit specific invasive plant species on the

<sup>1</sup> Plan developed by: Caleb Slezmonns  
Natural Resource Specialist  
Homer Soil and Water Conservation District  
4014 Lake St, Ste 201  
Homer, AK 99603

<sup>2</sup> Plan updated April 2010, April 2013, 2017

Table 1: INVASIVE AND NOXIOUS WEED SPECIES CLASSIFICATION  
(UPDATED April 2020)<sup>1</sup>AKNHP Invasiveness Ranking included

Table 1 is not an all-inclusive list of invasive species, potentially invasive, and established invasive species within the KP-CWMA geography. Rather, this list reflects partner priorities for treatment actions and awareness at this point in time. A more comprehensive list can be found in Appendix B.

Primary Concern (New Invaders, Eradicate from KP-CWMA)	Secondary Concern (Established Invaders, localized eradication)	Potential Invaders to the KP-CWMA
Cheat grass** (78) <i>Bromus tectorum</i>	Narrowleaf hawkbeard (56) <i>Crepis tectorum</i>	Garlic mustard (70) <i>Alliaria petiolata</i>
Elodea spp. (79) <i>canadensis, nuttallii</i>		
Creeping thistle* (76) <i>Cirsium arvense</i>		
Bull thistle (61) <i>Cirsium vulgare</i>		
Wild buckwheat, black bindweed* (50) <i>Fallopia convolvulus</i>		
Sweetclover (81) <i>Melilotus alba &amp; officinalis</i>		
Tansy ragwort (63) <i>Senecio jacobaea</i>		
Perennial sowthistle* (73) <i>Sonchus arvensis</i>		
Common tansy (60) <i>Tanacetum vulgare</i>		
Bird vetch* (73) <i>Vicia cracca</i>		

\* Currently listed as a prohibited or rest  
\*\* Historical record from Kenai Nation  
Conservation Center, currently manage

<sup>1</sup>AKNHP Ranking is an Alaska-specif  
by the Alaska Natural Heritage Program  
[content/uploads/invasiveness\\_Ranking\\_Sys](https://content/uploads/invasiveness_Ranking_Sys)



**Annual Report 2018**  
Invasive plant infestations reduce the biological, agricultural, recreational, and economic value of the land, decrease native plant populations, and degrade ecosystems. In order for management efforts to be successful, a broad-scale and coordinated approach is necessary to systematically integrate detection of invasive species and respond rapidly with a variety of treatment methods (manual, mechanical, and chemical).

The Kenai Peninsula Cooperative Weed Management Area (KP-CWMA) embodies and implements this integrated management approach through numerous partnerships, coordinated by the Homer Soil and Water Conservation District (HSWCD).

Taking a regional approach, we collaborate on surveying and monitoring, education and outreach, and treatment implementation throughout the 6-million acres of the Kenai Peninsula, the 10-mile Kenai Isthmus at Portage, Turnagain Arm, and communities across Kachemak Bay: Seldovia, Port Graham and Nanwalek.





# Priorities

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## Aquatic Species

- Elodea
- Invasive northern pike
- European green crab (marine)

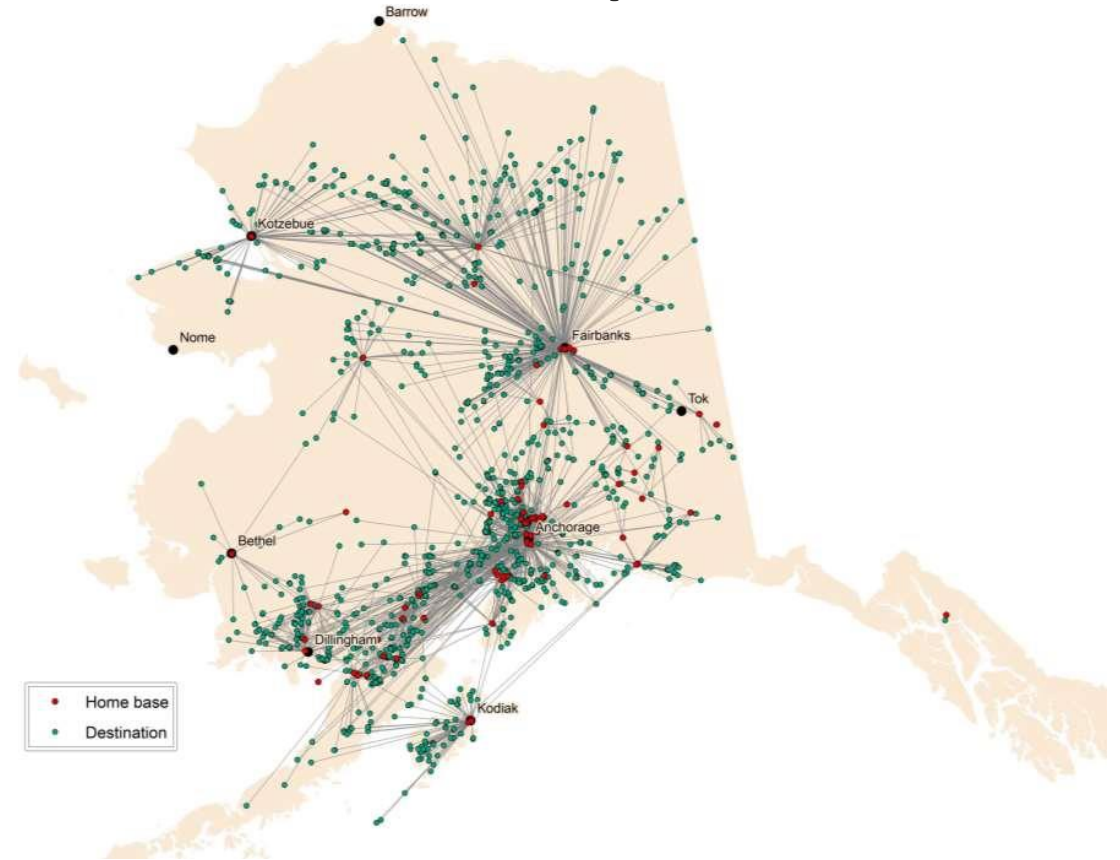
## Terrestrial Species

- White sweetclover
- Creeping thistle
- Bird vetch
- Orange hawkweed
- Reed canarygrass

## Woody Tree Species

- European bird cherry/chokecherry trees

# Elodea species



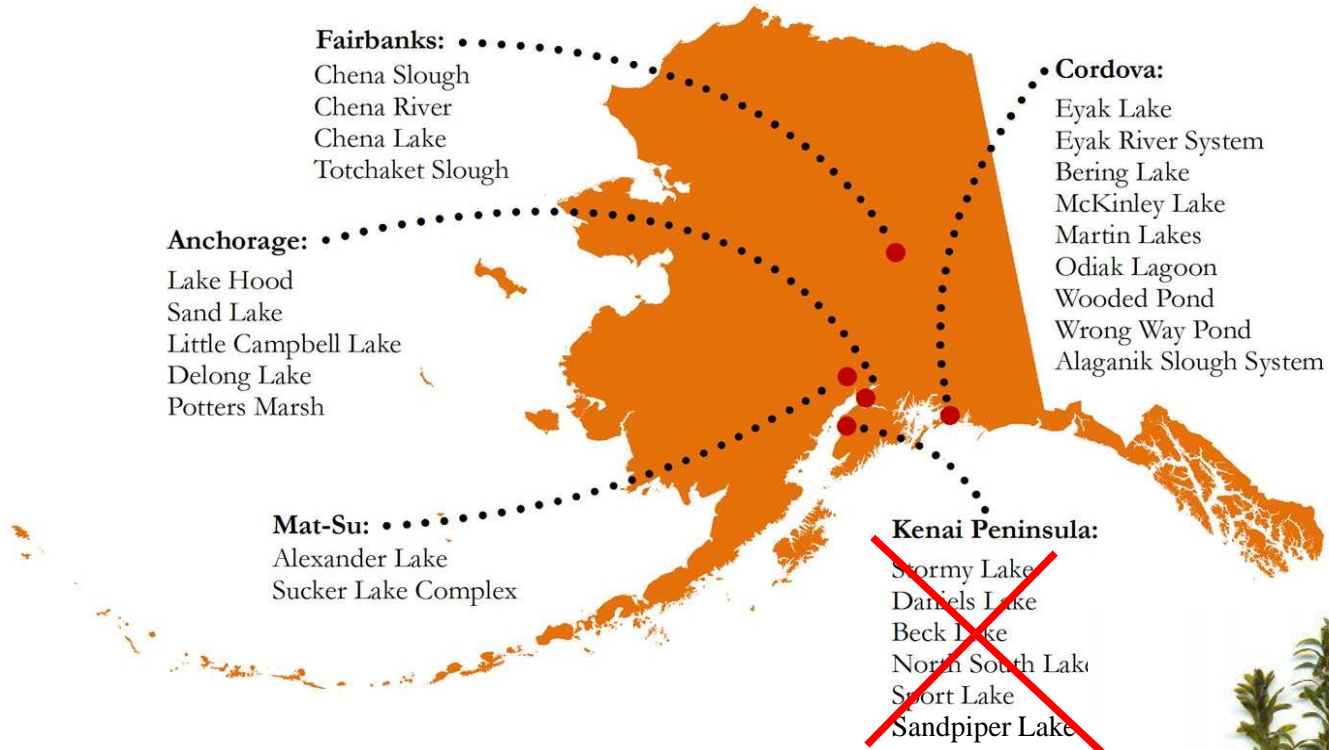
• Home base  
• Destination



**STOP AQUATIC  
HITCHHIKERS!**

Be A Good Steward. Clean. Drain. Dry.  
[StopAquaticHitchhikers.org](http://StopAquaticHitchhikers.org)

# Known Locations of Elodea in Alaska



As of 2021, not yet updated with 2022 data



# Driessend Mussels – not yet in AK



Zebra Mussel on a Marimo Moss Ball



Zebra Mussels

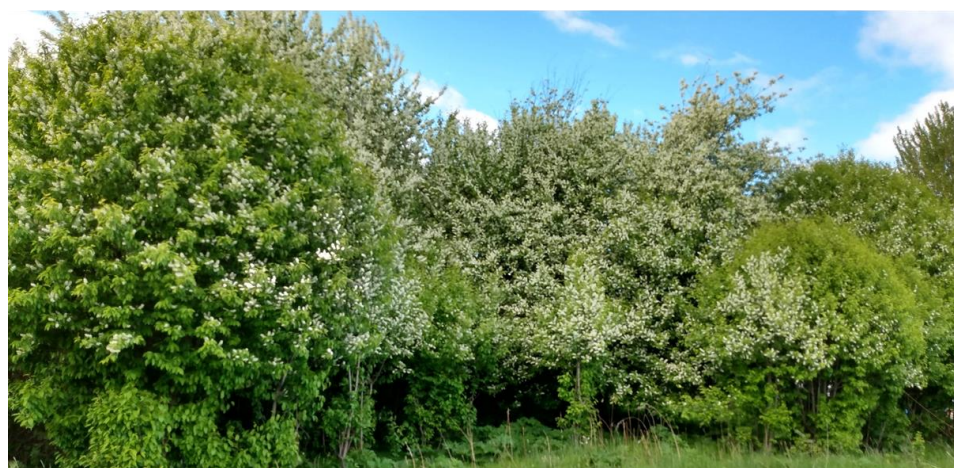


# Terrestrial Plants



Sharing data, resources, and expertise





Chokecherry/Mayday Trees (*Prunus padus* & *P. virginiana*)

Peninsula-wide effort

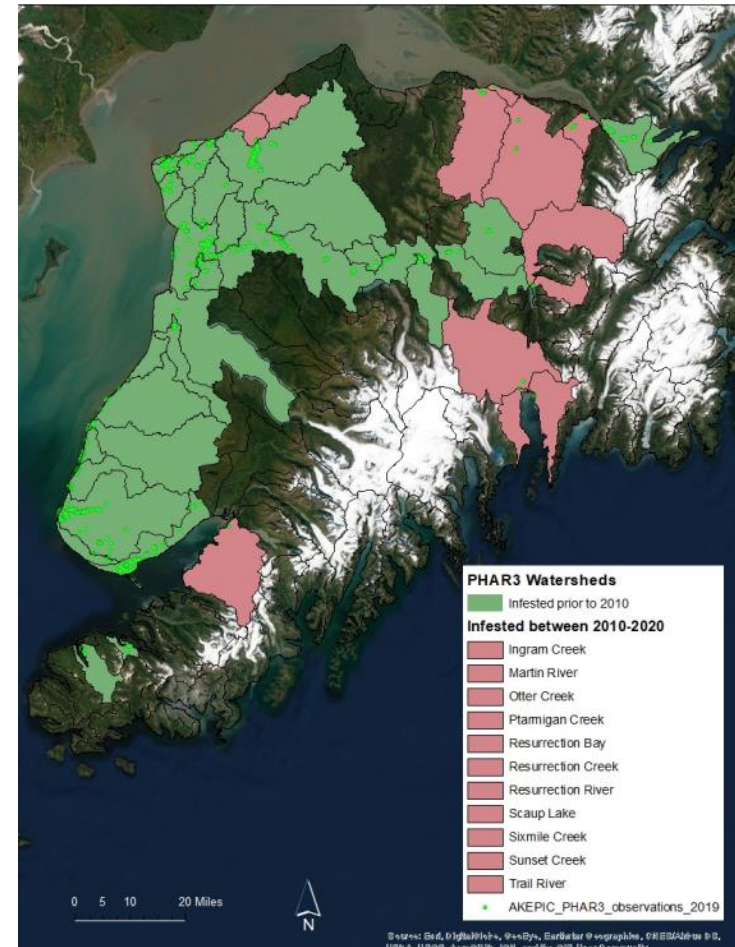
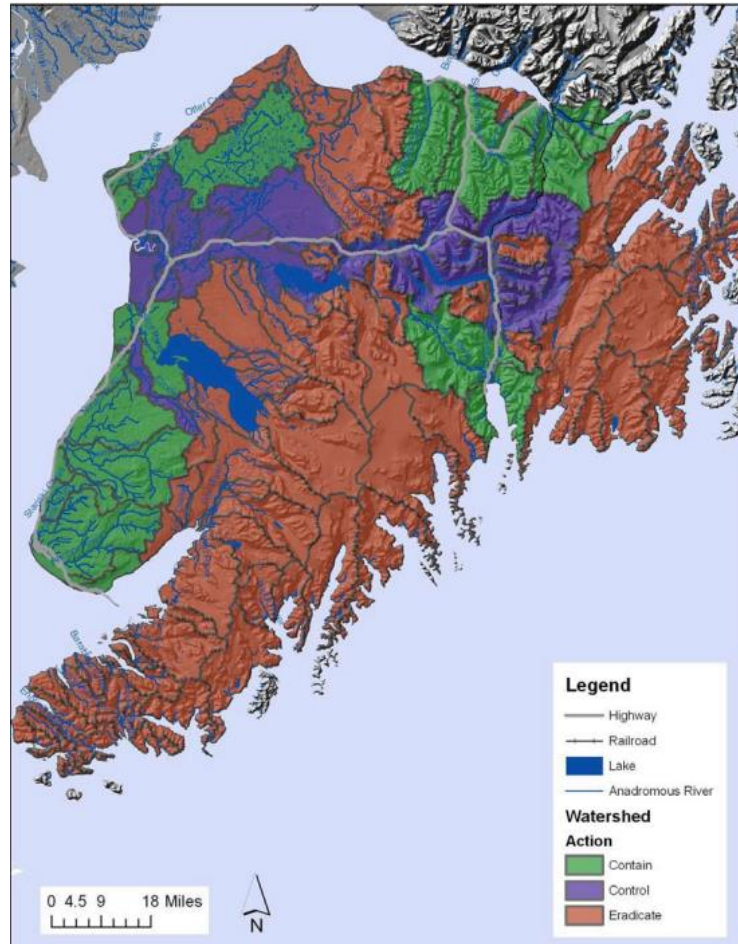
# Reed Canarygrass changes hydrology



# Reed Canarygrass (*Phalaris arundinacea*)

2007: Contain, Control, Eradicate

2020: New infestations since 2007



Useful tool for thinking about management at a watershed scale

Watershed			Key Characteristics/Considerations						2020 Additions			Relevant Plans		Recommendations	
Watershed Name	Basin	Discrete vs. Connected	Hwy & Railroad Miles	Number River Crossings	2010 # of PHAR3 Locations	Proportion Federal Lands	Anadromous River Miles	Size (ha)	Climate Change Sensitivity	Importance for Salmon Habitat	Recreational Use (Vector Concern)	Mountains to Sea Watershed	KPFHP Freshwater CAP (Overall Threat Status)	Recommended Management Action	Recommended Education Emphasis
Anchor River	South Cook Inlet	Discrete	22.5	74.0	290	0.0	170.2	59441	Susceptible	High	Heavy Use		High	Contain	High
Beaver Creek	Kenai River	Connected	2.5	7.0	11	0.8	21.3	15985	Moderate Impacts	High	Light Use	Yes	High	Control	High
Bernice Creek	North Cook Inlet	Discrete	8.5	0.0	22	0.0	0.0	3776	Susceptible	Low	Light Use		High	Contain	
Bishop Creek	North Cook Inlet	Discrete	7.9	15.0	58	0.1	21.4	9097	Susceptible	High	Light Use		High	Contain	High
Boulder Point	North Cook Inlet	Discrete	3.2	0.0	5	0.0	0.0	3135	Susceptible	Low	Light Use		High	Contain	
Crooked Creek	Kasilof River	Connected	5.0	14.0	13	0.4	56.9	14221	Susceptible	High	Light Use	Yes	High	Control	
Deep Creek	South Cook Inlet	Discrete	2.4	20.0	5	0.1	119.9	52265	Susceptible	High	Light Use	Yes	High	Contain	
Diamond Creek	Kachemak Bay	Discrete	6.3	1.0	2	0.0	0.0	5710	Moderate Impacts	Low	Light Use		Low	Contain	High
Falls Creek 1	South Cook Inlet	Discrete	11.6	5.0	1	0.0	0.0	6907	Moderate Impacts	Low	Light Use		Low	Contain	
Fritz Creek	Kachemak Bay	Discrete	10.0	2.0	56	0.0	0.2	10220	Moderate Impacts	Low	Heavy Use		Low	Contain	
Happy Creek	South Cook Inlet	Discrete	6.8	3.0	12	0.0	0.0	4544	Susceptible	Low	Light Use		High	Contain	
Hidden Creek	Kenai River	Connected	0.0	2.0	2	1.0	2.7	6022	Moderate Impacts	Medium	Heavy Use		Medium	Eradicate	
Ingram Creek*	Turnagain Arm	Discrete	19.8	2.0	4	1.0	2.1	6802	Resilient	Medium	Heavy Use		Medium	Contain	
Jakolof Creek	Kachemak Bay	Discrete	0.0	0.0	3	0.0	5.0	2885	Moderate Impacts	Medium	Light Use		Low	Eradicate	High
Jean Creek	Kenai River	Connected	18.8	1.0	2	1.0	15.5	2846	Moderate Impacts	High	Heavy Use		Medium	Control	
Kasilof River	Kasilof River	Discrete	7.1	10.0	1	0.7	58.4	57310	Resilient	Medium	Heavy Use	Yes	Medium	Contain	High
Kenai Estuary	Kenai River	Connected	0.0	22.0	10	0.0	31.7	3285	Resilient	High	Heavy Use	Yes	High	Control	High
Kenai River	Kenai River	Connected	62.2	93.0	113	0.6	190.8	111755	Resilient	Medium	Heavy Use	Yes	Medium	Control	High
Martin River*	Kachemak Bay	Discrete	0.0	0.0	6	0.6	16.9	41262	Resilient	Medium	Light Use		Low	Eradicate	
Moose River	Kenai River	Connected	17.4	6.0	1	1.0	61.1	58983	Susceptible	High	Heavy Use	Yes	High	Control	

Watershed			Key Characteristics/Considerations					
Watershed Name	Basin	Discrete vs. Connected	Hwy & Railroad Miles	Number River Crossings	2010 # of PHAR3 Locations	Proportion Federal Lands	Anadromous River Miles	Size (ha)

2020 Additions			Relevant Plans		Recommendations	
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Susceptible	High	Light Use		High	Contain	
Susceptible	Medium	Light Use	Yes	High	Eradicate	High



# Outreach & Education



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# Grant Funded Projects

## *Thank you!*

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**COPPER RIVER**  
**WATERSHED PROJECT**





*Passionate individuals are behind a functioning CISMA!*

**Katherine Schake, KP-CISMA Coordinator**

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**Homer Soil & Water**  
CONSERVATION DISTRICT



**KPCISMA**